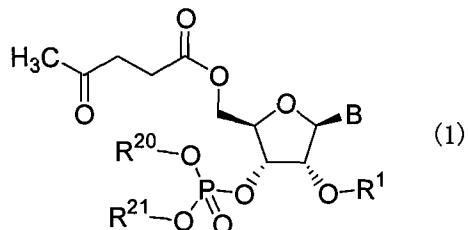


CLAIMS AMENDMENTS

This Listing of Claims replaces all prior versions and listings of claims in the application.

Claim 1 (previously presented): A ribonucleic acid compound represented by general formula (1):

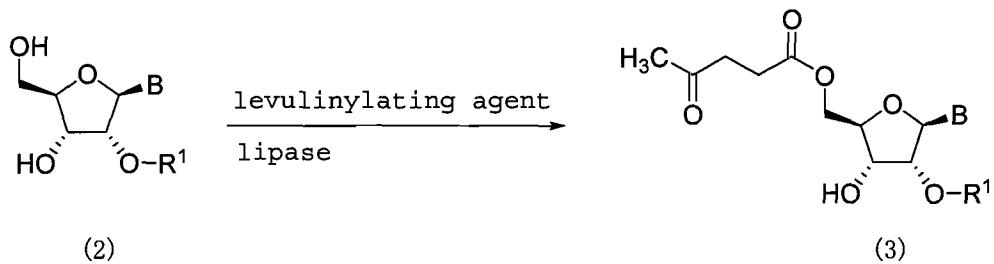


wherein B represents adenine, guanine, cytosine or uracil or a modified form thereof; R¹ represents a protecting group which can be removed at 90% or more at a temperature in the range from 0°C to 60°C under acidic conditions at a pH value from 2 to 4 within 24 hours; R²⁰ represents H or an alkyl which may be substituted; and R²¹ represents an aryl which may be substituted or a monocyclic or bicyclic heterocyclic which may be substituted, or a salt thereof.

Claim 2 (original): The ribonucleic acid compound or a salt thereof according to claim 1, wherein R¹ is 2-tetrahydrofuryl or 1,3-dioxolan-2-yl.

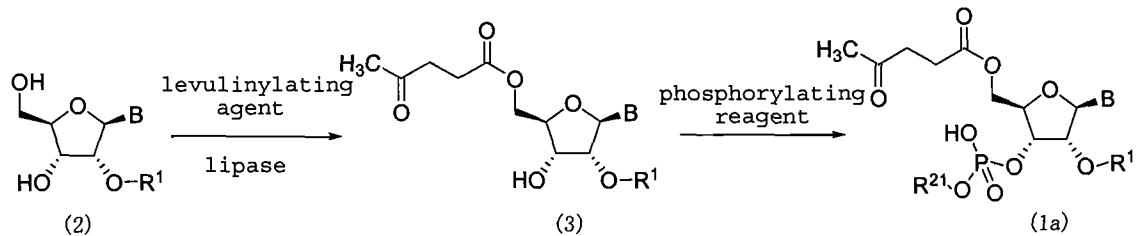
Claim 3 (currently amended): The ribonucleic acid compound or a salt thereof according to claim 1 or 2, wherein R²⁰ is H, 2-cyanoethyl or 2,2,2-trichloroethyl, and R²¹ is 2-chlorophenyl or 2-chloro-4-tert-butylphenyl.

Claim 4 (previously presented): A method for producing a ribonucleic acid compound represented by the following general formula (3), comprising regioselectively levulinylating the hydroxyl at the 5'-position of a ribonucleic acid compound represented by general formula (2) by allowing a levulinylating agent and a lipase to act on the compound represented by general formula (2):



wherein B represents adenine, guanine, cytosine or uracil or a modified form thereof; and R¹ represents a protecting group which can be removed at 90% or more at a temperature in the range from 0°C to 60°C under acidic conditions at a pH value from 2 to 4 within 24 hours.

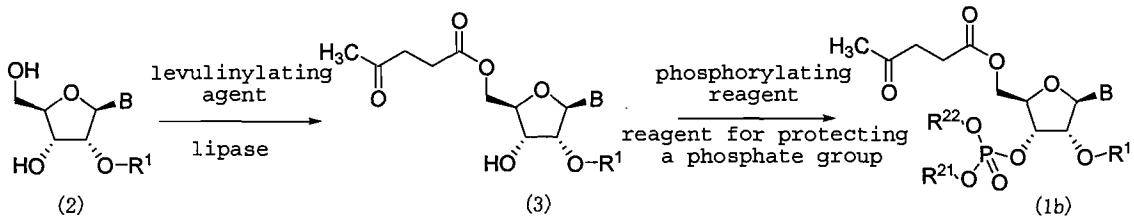
Claim 5 (currently amended): A method for producing a ribonucleic acid compound represented by general formula (1a), comprising allowing a phosphorylating reagent to act on a ribonucleic acid compound represented by general formula (3) produced by a production method including the step of regioselectively levulinylating the hydroxyl at the 5'-position of a ribonucleic acid compound represented by general formula (2) by allowing a levulinylating agent and a lipase to act on the compound represented by general formula (2):



wherein B represents adenine, guanine, cytosine or uracil or a modified form thereof; R¹ represents a protecting group which can be removed at 90% or more at a temperature in the range from 0°C to 60°C under acidic conditions at a pH value from 2 to 4 within 24 hours; and R²¹ represents an aryl which may be substituted or a monocyclic or bicyclic heterocyclic which may be substituted.

Claim 6 (previously presented): A method for producing a ribonucleic acid compound represented by general formula (1b), comprising allowing a phosphorylating reagent and a reagent for protecting a phosphate group to act on a ribonucleic acid compound represented by general formula (3) produced by a production method including the step of regioselectively levulinylating the hydroxyl

at the 5'-position of a ribonucleic acid compound represented by general formula (2) by allowing a levulinylating agent and a lipase to act on the compound represented by general formula (2):



wherein B represents adenine, guanine, cytosine or uracil or a modified form thereof; R¹ represents a protecting group which can be removed at 90% or more at a temperature in the range from 0°C to 60°C under acidic conditions at a pH value from 2 to 4 within 24 hours; R²¹ represents an aryl which may be substituted or a monocyclic or bicyclic heterocyclic which may be substituted; and R²² represents an alkyl which may be substituted.

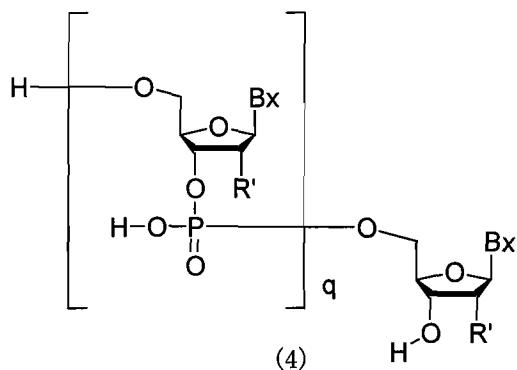
Claim 7 (currently amended): The method for producing a ribonucleic acid compound according to claim 4 ~~any one of claims 4 to 6~~, wherein R¹ is 2-tetrahydrofuryl or 1,3-dioxolan-2-yl.

Claim 8 (currently amended): The method for producing a ribonucleic acid compound according to claim 4 ~~any one of claims 4 to 7~~, wherein the levulinylating agent is levulinic acid, levulinic anhydride, a levulinate ester or a levulinoyl halide ~~levulinate~~.

Claim 9 (currently amended): The method for producing a ribonucleic acid compound according to claim 5 ~~any one of claims 5 to 8~~, wherein the phosphorylating reagent is 2-chlorophenyl phosphoroditriazolide, 2-chlorophenyl-O,O-bis(1-benzotriazolyl)phosphate or 2-chloro-4-tert-butylphenyl phosphoroditriazolide.

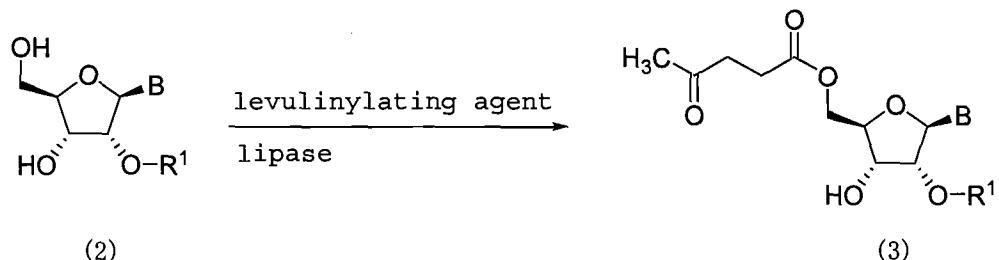
Claim 10 (currently amended): The method for producing a ribonucleic acid compound according to ~~claim 6 any one of claims 6 to 9~~, wherein the reagent for protecting a phosphate group is 3-hydroxypropionitrile or 2,2,2-trichloroethanol.

Claim 11 (previously presented): A liquid-phase synthesis method for an oligonucleotide compound represented by general formula (4):



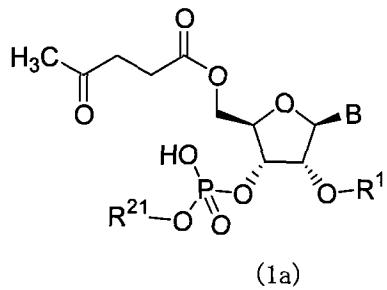
wherein each Bx independently represents adenine, guanine, cytosine, uracil or thymine or a modified form thereof; q represents an integer in the range from 1 to 100; at least one of R' is hydroxyl and the others represent independently H or hydroxyl, comprising the following steps (a) to (f):

(a) producing a ribonucleic acid compound represented by general formula (3) by regioselectively levulinylating the hydroxyl at the 5'-position of a ribonucleic acid compound represented by general formula (2) by allowing a levulinylating agent and a lipase to act on the compound represented by general formula (2):



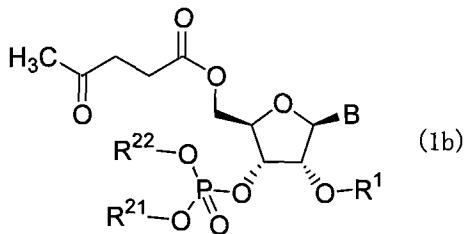
wherein B represents adenine, guanine, cytosine or uracil or a modified form thereof; and R¹ represents a protecting group which can be removed at 90% or more at a temperature in the range from 0°C to 60°C under acidic conditions at a pH value from 2 to 4 within 24 hours;

(b) producing a ribonucleic acid compound represented by general formula (1a) by phosphorylating the hydroxyl at the 3'-position of the compound represented by general formula (3) by allowing a phosphorylating reagent to act on the compound represented by general formula (3) produced by step (a):



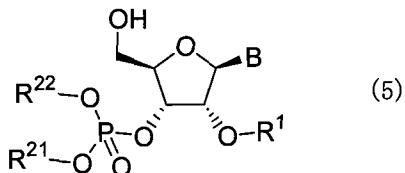
wherein B and R¹ are as defined above; and R²¹ represents aryl which may be substituted or a monocyclic or bicyclic heterocyclic group which may be substituted;

(c) producing, separately from step (b), a ribonucleic acid compound represented by general formula (1b) by allowing a phosphorylating reagent and a reagent for protecting a phosphate group to act on the compound represented by general formula (3) produced by step (a):



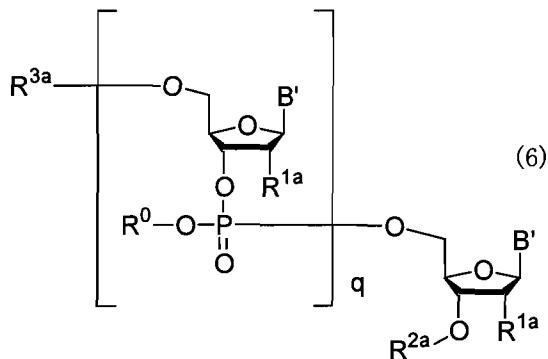
wherein B, R¹, and R²¹ are as defined above; and R²² represents alkyl which may be substituted;

(d) producing a ribonucleic acid compound represented by general formula (5) by deprotecting levulinyl of the compound represented by general formula (1b) produced by step (c):

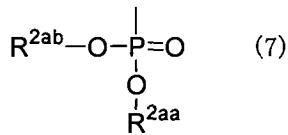


wherein B, R¹, R²¹ and R²² are as defined above;

(e) producing an oligonucleotide compound represented by general formula (6) by stepwise oligomerization using as a monomer component, at least one of the ribonucleic acid compounds represented by general formulas (1a) and (5) produced by steps (b) and (d), respectively:



wherein each B' independently represents adenine, guanine, cytosine, uracil or thymine or a modified form thereof; each R^0 independently represents H, aryl which may be substituted or a monocyclic or bicyclic heterocyclic group which may be substituted; R^{3a} represents H, levulinyl or 4,4'-dimethoxytrityl; q is as defined above; at least one of R^{1a} is hydroxyl substituted with a protecting group which can be removed at 90% or more at a temperature in the range from 0°C to 60°C under acidic conditions at a pH value from 2 to 4 within 24 hours, and the others independently represent H or hydroxyl substituted with a protecting group which can be removed at 90% or more at a temperature in the range from 0°C to 60°C under acidic conditions at a pH value from 2 to 4 within 24 hours; and R^{2a} represents acyl or a phosphate group represented by general formula (7):



wherein R^{2aa} represents aryl which may be substituted or a monocyclic or bicyclic heterocyclic group which may be substituted; and R^{2ab} represents H or alkyl which may be substituted; and

(f) deprotecting all the protecting groups of the oligonucleotide compound represented by general formula (6) produced by step (e).

Claim 12 (original): The liquid-phase synthesis method for an oligonucleotide compound according to claim 11, wherein R^1 is 2-tetrahydrofuryl or 1,3-dioxolan-2-yl.

Claim 13 (currently amended): The liquid-phase synthesis method for an oligonucleotide compound according to claim 11 or 12, wherein q is an integer in the range from 1 to 100.

Claim 14 (currently amended): The liquid-phase synthesis method for an oligonucleotide compound according to claim 11 any one of claims 11 to 13, wherein q is an integer in the range from 10 to 50.

Claim 15 (currently amended): The liquid-phase synthesis method for an oligonucleotide compound according to claim 11 any one of claims 11 to 14, wherein the levulinylating agent is levulinic acid, levulinic anhydride, a levulinate ester or a levulinoyl halide levulinate.

Claim 16 (currently amended): The liquid-phase synthesis method for an oligonucleotide compound according to claim 11 any one of claims 11 to 15, wherein the phosphorylating reagent is 2-chlorophenyl phosphoroditriazolide, 2-chlorophenyl-O,O-bis(1-benzotriazolyl)phosphate or 2-chloro-4-tert-butylphenyl phosphoroditriazolide.

Claim 17 (currently amended): The liquid-phase synthesis method for an oligonucleotide compound according to claim 11 any one of claims 11 to 16, wherein the reagent for protecting a phosphate group is 3-hydroxypropionitril or 2,2,2-trichloroethanol.

Claim 18 (new): The method for producing a ribonucleic acid compound according to claim 5, wherein R¹ is 2-tetrahydrofuryl or 1,3-dioxolan-2-yl.

Claim 19 (new): The method for producing a ribonucleic acid compound according to claim 5, wherein the levulinylating agent is levulinic acid, levulinic anhydride, a levulinate ester or a levulinoyl halide.

Claim 20 (new): The method for producing a ribonucleic acid compound according to claim 6, wherein R¹ is 2-tetrahydrofuryl or 1,3-dioxolan-2-yl.

Claim 21 (new): The method for producing a ribonucleic acid compound according to claim 6, wherein the levulinylating agent is levulinic acid, levulinic anhydride, a levulinate ester or a levulinoyl halide.

Claim 22 (new): The method for producing a ribonucleic acid compound according to claim 6, wherein the phosphorylating reagent is 2-chlorophenyl phosphoroditriazolide, 2-chlorophenyl-O,O-bis(1-benzotriazolyl)phosphate or 2-chloro-4-tert-butylphenyl phosphoroditriazolide.